CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 84-48

NPDES PERMIT NO. CA0037982

WASTE DISCHARGE REQUIREMENTS FOR:

ESTERO MUNICIPAL IMPROVEMENT DISTRICT
FOSTER CITY LAGOON, SAN MATEO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, finds that:

1. Estero Municipal Improvement District (hereinafter discharger) by application dated December 13, 1983, has applied for renewal of waste discharge requirements and a permit to discharge wastes under the National Pollutant Discharge Elimination System.

2. The discharger is currently discharging about 20 million gallons per day (mgd) of waste containing pollutants into San Francisco Bay, a water of the United States, at a point approximately 1300 feet east of the intersection of Foster City Boulevard and Third (3rd) Avenue in Foster City, California. The discharge is within the Foster City North Shellfish bed. The waste consists of water taken in from Belmont Slough during high tide and circulated through the Foster City Lagoon, a water of the United States. The lagoon is normally flushed by natural tidal cycles, which requires the manipulation of slide gates, flap gates, and weirs. In addition, pumps are available to augment water exchange and to prevent flooding from storm runoff. The lagoon is subject to occasional dense growths of algae and aquatic weeds and the discharge of its contents into San Francisco Bay constitutes a "discharge of pollutants" as defined in Section 502 of the Federal Water Pollution Control Act Amendments of 1972.

3. The Board adopted the amended Water Quality Control Plan for San Francisco Bay Basin in July 1982. The Basin Plan contains water quality objectives for the Foster City Lagoon and Lower San Francisco Bay.

4. The beneficial uses of the Foster City Lagoon are:
   a. Water contact recreation
   b. Non-contact water recreation
   c. Wildlife habitat
   d. Ocean commercial and sport fishing

5. The beneficial uses of Lower San Francisco Bay are:
   a. Water contact recreation
   b. Non-contact water recreation
   c. Wildlife habitat
   d. Preservation of rare and endangered species
   e. Estuarine habitat
   f. Fish migration
   g. Industrial process supply
   h. Shellfish harvesting
   i. Navigation
   j. Commercial and sport fishing

6. Approximately $1,500,000 of Clean Water Grant and local and state matching funds was spent to provide advanced wastewater treatment facilities at the San Mateo and South Bayside System Authority's wastewater treatment plants specifically to protect shellfish harvesting in Foster City and its vicinity. In order to operate, maintain and to provide for the replacement of these advanced facilities during the dry season from May through September approximately $150,000 annually is currently being spent.

7. Investigation of the potential for recreational shellfish harvesting in San Francisco Bay was authorized by the Board in Resolution No. 78-8, titled "Policy Statement with Respect to the Regional Board Program to Open San Francisco Bay Shellfish Beds for Direct Recreational Use".

8. Approximately $800,000 was spent as part of the Board's Shellfish Program to evaluate problems preventing safe shellfish harvesting within two San Francisco Bay study areas and to identify possible solutions. The San Mateo County area studied included shellfish beds extending from Burlingame to Foster City.

9. The major findings of the Shellfish Program and the Regional Board's policy position on correcting water quality problems that were identified are contained in Resolution No. 83-10, titled "Policy Statement Concerning the Results of the San Francisco Bay Shellfish Program and Measures Needed to Protect Shellfishing as a Beneficial Use of the Bay".

10. The three shellfish beds located in Foster City were found by the Shellfish Program to be contaminated by coliform bacteria principally from the discharge of Foster City Lagoon water. The main source of coliform in the Foster City Lagoon during the dry season appears to be waterfowl.

11. A consultant to the Regional Board identified the

costs and feasibility of various methods of eliminating, treating, of managing dry season runoff from creeks, storm drains, and the Foster City Lagoon to prevent coliform contamination at the Foster City and other South Bay shellfish beds.

12. The control method recommended by the Regional Board's consultant for the Foster City Lagoon is to modify the lagoon's inlet and outlet structures to change the point of discharge from the north to the south end of the lagoon during the dry season. A discharge from the south end of the lagoon would be into Belmont Slough.

13. There are a number of unresolved issues regarding such a change in the discharge location during the dry season including the following: the effect on water quality within the lagoon; the effect on water quality in Belmont Slough; the degree of improvement in coliform quality of the Foster City shellfish beds; and the long-term costs of such a modification.

14. An effective way to answer these questions is for the lagoon to operate using the south end as both an inlet and an outlet for a 60-day trial period and to monitor the results.

15. There is some doubt that application of persistent and cumulative biocides are needed to prevent nuisance blooms of aquatic plants. The Basin Plan requires that to grant permission to apply such biocides, a net environmental benefit must be demonstrated to the satisfaction of the Board. It appears that a net environmental benefit will result from biocide application (Appendix B), but a final determination will be made by the Board following additional study, the results of which will also be used to prepare a Lagoon Management Plan.

16. The Regional Board has determined that there are no state mandated local costs under 2231 of the Revenue and Tax Code as a result ot this Order because such Order is not an executive regulation by virtue of Section 2209 of the Revenue and Tax Code.

17. This Order serves as an NPDES permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of California Water Code.

18. The discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided with the

opportunity for a public hearing and the opportunity to submit their written views and recommendations.

19. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that the discharger in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Clean Water Act as amended and regulations and guidelines adopted thereunder shall comply with the following:

A. Discharge Prohibitions

1. The discharge of any municipal or industrial waste other than urban stormwater or landscape watering runoff is prohibited.

2. Application of biocides of a persistent and cumulative form is prohibited except where net environmental benefit can be demonstrated to the satisfaction of the Board. If it is the finding of the Board that there exists a net environmental benefit, then a Lagoon Management Plan may be approved. If, as part of the development of the Lagoon Management Plan or to prevent nuisance aquatic blooms limited application of biocides is necessary, then it shall be done only with written approval of the Executive Officer.

3. Discharge of any lagoon water containing animal wastes to the Foster City North shellfish beds during the dry season except stormwater runoff and conditional upon the outcome of Provisions 3, 4, and 5 is prohibited.

B. Effluent Limitations

1. The discharge of lagoon water to San Francisco Bay in excess of the following limits is prohibited:

Constituents	Units	Instantaneous Maximum
BOD	mg/l	20
Oil and Grease	mg/l	15

2. The discharge shall not have a pH of less than 6.5 nor greater than 8.5.

3. Instantaneous maximum limitations shall be applied to the values of the measurements obtained for any single grab sample.

C. Lagoon Water Limitations

1. The discharger shall provide sufficient circulation through the lagoon to maintain the following limits of quality:

a. Chlorophyll 'a' - less than 50 ug/l increase above influent concentration;

b. Dissolved oxygen - 5.0 mg/l, minimum.

2. The discharger shall provide sufficient circulation through the lagoon to prevent the following conditions at any point in the lagoon:

a. Visible, floating, suspended or deposited oil or other products of petroleum origin;

b. Floating, suspended or deposited macroscopic particulate matter or foam;

c. Aquatic growths in quantities sufficient to create a nuisance condition as defined in the California Water Code;

d. Significant increases in apparent color beyond natural background levels in Belmont Slough;

e. Increase turbidity above present natural background levels in Belmont Slough by more than the following:

Belmont Slough Background	Incremental Increase
<50 units (JTU)	5 units, maximum
50-100 units	10 units, maximum
>100 units	10% of background, maximum

f. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on fish, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the lagoon or as a result of biological concentration.

D. Receiving Water Limitations

1. The discharge of lagoon water to San Francisco Bay shall not cause:

a. Visible, floating, suspended or deposited oil or other

products of petroleum origin at any place;

b. Floating, suspended, or deposited macroscopic particulate matter at any place;

c. Increased turbidity above background levels at any place by more than the following:

Receiving Water Background	Incremental Increase
<50 units (JTU)	5 units, maximum
50-100 units	10 units, maximum
>100 units	10% of background, maximum

2. This discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

E. Provisions

1. In accordance with Discharge Prohibition A.2, a management plan must be developed by the discharger and approved by the Executive Officer. The Lagoon Management Plan shall detail lagoon management practices which minimize the use of biocides and specify which biocides should be used, what lagoon conditions indicate their use is necessary, and what techniques will be used in their application. The Lagoon Management Plan will be developed according to the following schedule:

Task	Date
Begin study determining effects of biocide(s) on target and non-target organisms by	1 August 1984
Submit draft of Lagoon Management Plan to Executive Officer by	1 June 1985
Submit final Lagoon Management Plan which is responsive to the Executive Officer's comments on draft plan for final approval by	1 August 1985

2. Any changes in the type or amount of biocides being applied to the lagoon or changes in timing, nature, or manner of application will require the approval of the Regional Board's Executive Officer as amendments or revisions of the Lagoon's Management Plan and future amendments. The Executive Officer shall not approve any amendment to the Lagoon Management Plan unless it has been demonstrated to the satisfaction of the Executive Officer that the effects of the modified biocide application procedures are consistent with the Basin Plan.

3. The discharger will conduct a trial study consisting of using the lagoon's inlet structure at Belmont Slough as the only point of taking water into or discharging water from the lagoon for a period of at least 60 days duration to evaluate the potential effect of implementing Discharge Prohibition 3. The study will result in the following products and be completed according to the following schedule:

Task	Date
Begin 60-day trial discharge period by	15 July, 1985
Submit draft report on results of feasibility study by	15 October, 1985
Submit final report which is responsive to Executive Officer's comments by	15 January, 1986

4. If based on the final feasibility study report the Executive Officer finds that using the inlet structure as the only intake and discharge point may be feasible for a significant period of time during the dry season, the Estero Municipal Improvement District will prepare and submit a report on the short and long-term costs of modifying and operating the lagoon in this manner during the dry season by April 15 1986.

5. Prohibition 3 will not take effect until the Regional Board determines that the costs and environmental benefits of the prohibition are reasonable.

6. The requirements prescribed by this Order supersede the requirements prescribed by Order No. 79-51, adopted by the Board on May 15, 1979. Order No. 79-51 is hereby rescinded.

7. The discharger shall comply with all effluent, lagoon, and receiving water limitations, prohibitions, and provisions of this Order immediately upon adoption.

8. The discharger shall comply with the attached Self-Monitoring and Reporting Program as adopted by the Regional Board and as may be amended by the Executive Officer.

9. The discharger shall comply with all terms of the attached "Standard Provisions and Reporting Requirements," dated April 1977, except A.5, A.12, B.3, and B.5.

10. The discharger shall ensure that privately owned lagoons and other water bodies contiguous with or discharging to the Foster City Lagoon shall be designed, operated, and maintained in accordance with the conditions of this Order and the City's approved Lagoon Management Plan.

11. The discharger shall submit by February 1 each year a list of all the biocides used in the lagoon and the amount and location of application.

12. This Order expires June 20, 1989. The discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code, not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

13. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act or amendments thereto, and shall become effective ten (10) days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on July 18, 1984.

Roger B. James
Executive Officer

Attachments:
Standard Provisions & Reporting Requirements, April 1977

Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

ESTERO MUNICIPAL IMPROVEMENT DISTRICT

FOSTER CITY, SAN MATEO COUNTY

NPDES NO. CA 0037932

ORDER NO. 84-48

CONSISTS OF

PART A

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INTAKE

Station	Description
I-1	At a point in Belmont Slough, immediately adjacent to the slide gates of the lagoon water intake structure.

B. EFFLUENT

Station	Description
E-001	At a point in the lagoon, immediately adjacent to the "forebay" sump of the pump station.
E-002	At a nearshore point within the box culvert downstream of the pump station.

C. LAGOON WATER

Station	Description
LG-1	At a point in the lagoon, adjacent to the Beach Park Blvd. bridge, at the midpoint of the lagoon's width.
LG-2	At a point in the main lake of the lagoon, adjacent to the pier which parallels East Hillsdale Blvd., equidistant from Shell Blvd. and Edgewater Blvd.
LG-3	At a point in the lagoon, adjacent to the East Hillsdale Blvd. bridge, at the midpoint of the lagoon's width.
LG-4 through LG-'n'	At the points of connection to or discharge into the Foster City Lagoon.

D. RECEIVING WATERS

Station	Description
C-1	At a point in San Francisco Bay, located approximately 100 feet from the end of the

	box culvert or outfall, along a line parallel to the outfall pipes.
C-2	At a point in San Francisco Bay, located approximately 100 feet northeast of C-1.
C-3	At a point in San Francisco Bay, located approximately 1500 feet from the end of the box culvert or outfall, along a line parallel to the outfall pipes.

II. SUPPLEMENTAL STATIONS DURING THE STUDY OF THE EFFECTS OF DISCHARGING TO BELMONT SLOUGH

Station	Description
E-003	At a point in the lagoon, immediately adjacent to the lagoon's three 42-inch culverts.
S-1	At a point in Belmont Slough where the dredged, lagoon inlet channel joins the main Belmont Slough channel.
S-2	At a point in Belmont Slough under the overhead power lines approximately 500 yards bayward of S-1.
S-3	At a point in Belmont Slough approximately 500 yards landward of S-1.

III. SCHEDULE OF SAMPLING, MEASUREMENTS AND ANALYSES

The schedule of sampling, measurement, and analyses shall be as given in Table I.

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 84-48.

2. Does not include the following paragraphs of Part A:

C.1., C.3, C.4, C.5.c., C.5.d., C.5.o., D.1., D.2.a., D.3.a., D.4., E., F.2., F.3.g.

3. Is effective on the date shown below.

4. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer.

ROGER B. JAMES
Executive Officer

Attachment: Table 1

Effective Date

TABLE 1
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS
Estero Municipal Improvement District
ORDER NO. 79-51

Sampling Station	(1) I-1	E-001 (3) or E-002	IG	(3) C	(6) E-003	(7) S
TYPE OF SAMPLE	G	G	G	G	G	G
Flow Rate (2) (mgd and pump-hours)		D			D	
Kjeldahl Nitrogen, NO -N, NO -N, NH -N					2W	
pH (units)	2W/M	2W/M	2W/M		2W	2W
Chlorophyll 'a' (ug/l)	2W/M		2W/M		2W	2W
Dissolved Oxygen (mg/l)			(5) 2W/M			2W
Temperature (°C)			(5) 2W/M			2W
Turbidity (Nephelometric Turbidity Units)	2W/M	2W/M	2W/M			2W
All Applicable Standard Obnservations		2W/M	2W/M	2W/M	2W	2W

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample

TYPES OF STATIONS

I = intake and/or water supply stations
E = waste effluent stations
C = receiving water stations
L = lagoon stations
S = Belmont Slough stations

FREQUENCY OF SAMPLING

D = once each day
2W = every two weeks
2W/M = every two weeks May 1 through September 30
monthly October 1 through April 30

FOOTNOTES:

(1) Samples of intake water shall be collected on days conincident with sampling of lagoon water.

(2) A tabulation shall be maintained showing, for each day, the total volume of lagoon water discharged, as well as the number of pump-hours recorded. This tabulation shall be included in the report described in Paragraph F.3. of Part A.

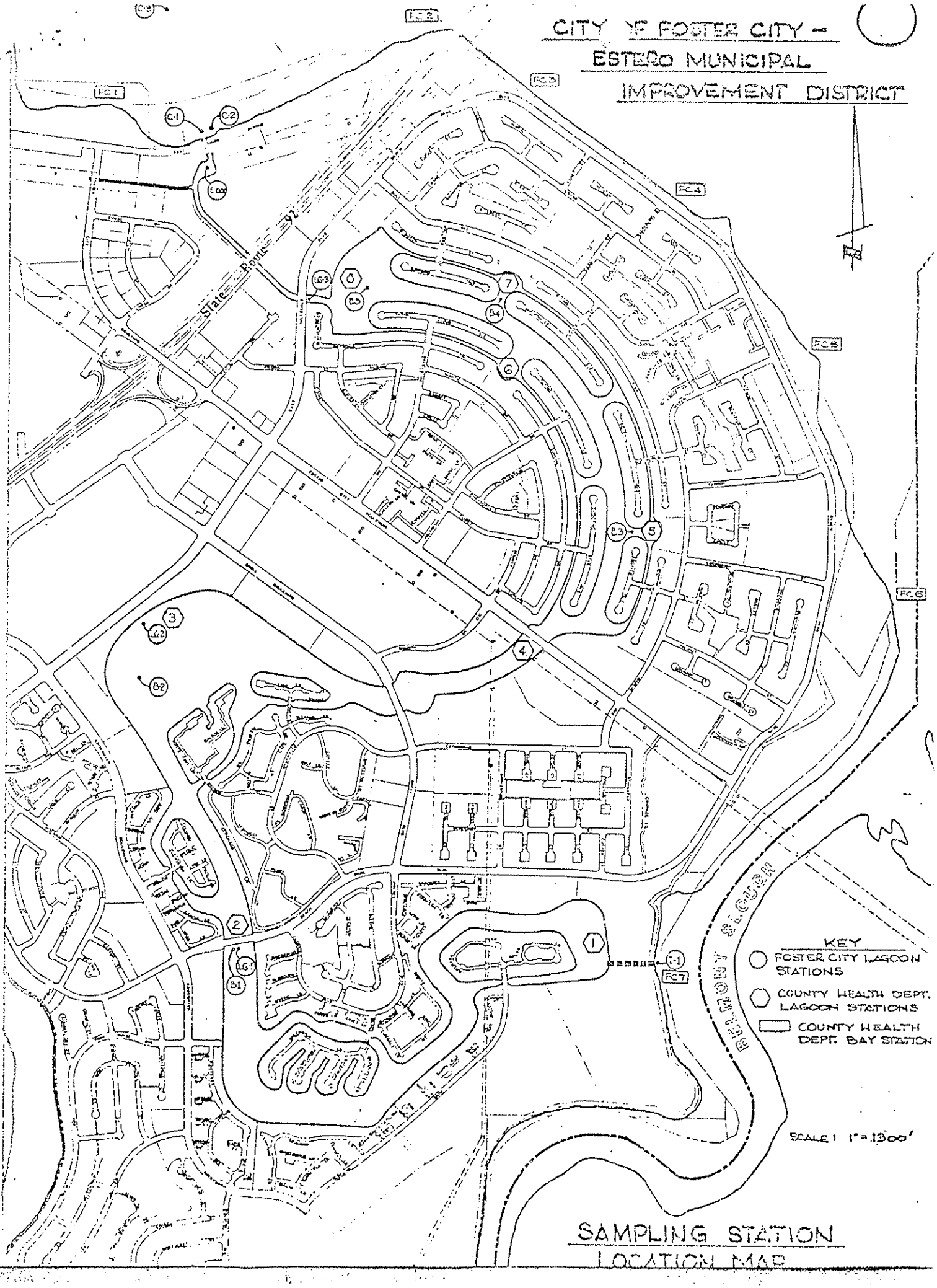
(3) To be sampled while discharge from the lagoon is occurring. If there is no discharge during a given month sample at E-001 instead.

(4) Lagoon water and intake water standard observations shall be the same as those described for receiving waters in Part A, Paragraph C.5.a.

(5) Time of sampling will be within one hour of sunrise.

(6) To be sampled during the study of the effects of discharging to Belmont Slough in place of Stations E-001 and E-002.

(7) To be sampled during the study of the effects of discharging to Belmont Slough if at any time the dissolved oxygen concentration at any point in the lagoon is <5 mg/l, chlorophyll 'a' is >50 mg/l; or pH is not within the range 6.5 to 8.5.


CITY OF FOSTER CITY -
ESTERO MUNICIPAL
IMPROVEMENT DISTRICT
State Route 92
FC-1
FC-2
FC-3
FC-4
FC-5
FC-6
FC-7
C-1
C-2
E-1
B-1
B-2
B-3
B-4
B-5
LG-1
LG-2
LG-3
1
2
3
4
5
6
7
I-1
KEY
FOSTER CITY LAGOON STATIONS
COUNTY HEALTH DEPT. LAGOON STATIONS
COUNTY HEALTH DEPT. BAY STATION
SCALE: 1" = 1300'
SAMPLING STATION
LOCATION MAP